PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application
based on International Application No. PCT/EP99/01674
Filed March 15, 1999
Inventor(s) FREY *et al.*

For: **POLYMERASE CHIMERAS**

Attorney Docket No. 4894

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
BOX PCT
Washington, D.C. 20231

Alameda, CA 94501
Date: August 30, 2000

Sir:

Prior to examining the above-referenced application as entering the National Stage under 35 U.S.C. §371, please consider the following amendments and remarks.

IN THE CLAIMS

At page 1, line 1 of the Amendment of claims under PCT Article 19, please delete "Claims" and insert therefor --WHAT IS CLAIMED IS--.

Please amend the claims as follows:

1. (Amended) A polymerase [Polymerase] chimera comprising [composed of] functional amino acid fragments of at least two different polymerases, wherein the functional amino acid fragments are active in the polymerase chimera, a [and the] domain having polymerase activity is derived from the first polymerase and a [the] domain having 3'- 5' exonuclease activity is derived from the second polymerase, and wherein the amino acid sequence of the polymerase chimera essentially corresponds to SEQ ID NO: 8.

2. (Amended) A polymerase [Polymerase] chimera comprising [composed of] functional amino acid fragments of at least two different polymerases, wherein the functional amino acid fragments are active in the polymerase chimera, a [and the] domain having polymerase activity is derived from the first polymerase and a [the] domain having 3'- 5' exonuclease activity is derived from the second polymerase, and wherein the amino acid sequence of the polymerase chimera essentially corresponds to SEQ ID NO: 10.

3. (Amended) A polymerase [Polymerase] chimera comprising [composed of] functional amino acid fragments of at least two different polymerases, wherein the functional amino acid fragments are active in the polymerase chimera, a [and the] domain having polymerase activity is derived from the first polymerase and a [the] domain having 3'- 5' exonuclease activity is derived from the second polymerase, and wherein the amino acid sequence of the polymerase chimera essentially corresponds to SEQ ID NO: 12.

4. (Amended) The polymerase [Polymerase] chimera as claimed in one of the claims 1-3, wherein the chimera additionally has reverse transcriptase [RT] activity.

5. (Amended) The polymerase [Polymerase] chimera of claim 4 [as claimed in one of the claims 1-4], wherein histine tags have been incorporated into the amino acid sequence of the chimera.

6. (Amended) A nucleic acid that encodes the [DNA sequence of a] polymerase chimera as claimed in claim 1, 2 or 3 [one of the claims 1-5].

7. (Amended) A nucleic acid that encodes [DNA sequence of] a polymerase chimera comprising the sequence of SEQ ID NO. 2 [according to SEQ ID N0. 2].

8. (Amended) A nucleic acid that encodes [DNA sequence of] a polymerase chimera comprising the sequence of SEQ ID NO. 4 [according to SEQ ID NO. 4].

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9. (Amended) A nucleic acid that encodes [DNA sequence of] a polymerase chimera comprising the sequence of SEQ ID NO. 6 [according to SEQ ID NO. 6].

CONT

10. (Amended) A vector comprising the nucleic acid [Vector containing a DNA sequence] as claimed in claim 6 [claims 6-9].

11. (Amended) A host [Transformed] cell which has been transformed with [contains] the vector as claimed in claim 10.

12. (Amended) A process [Process] for the production of the polymerase chimeras as claimed in one of the claims 1-3 [1-5], wherein the process comprises the following steps:

- (a) designing variants with the aid of amino acid sequence alignments, of three dimensional [3D] models or with the aid of experimentally determined three dimensional [3D] structures;

- (b) production of domain exchange variants by genetic engineering;

- (c) ligating [the] DNA fragments that encode the variants into starting vectors;

- (d) expression of the chimeras in a host which has been [was] transformed by vectors carrying the DNA fragments; and

- (e) purifying the expressed polymerase chimeras.

13. (Amended) A method for using [Use of] the polymerase chimeras as claimed in one of the claims 1-3 [1-5] for PCR.

14. (Amended) A method for using [Use of] the polymerase chimeras as claimed in one of the claims 1-3 for sequencing [1-5 to sequence] DNA fragments.

15. (Amended) A method for using [Use of] the polymerase chimeras as claimed in one of the claims 1-3 [1-5] for RT-PCR starting with an RNA template.

16. (Amended) A kit comprising [Kit containing] a polymerase chimera as claimed in one of the claims 1-3 [1-5].

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CONT

REMARKS

Applicants have amended the claims to comply with the U.S. patent practice in matters of form and to remove multiple dependency in certain claims. After entry of this Amendment, claims 1-16 are pending in this application. The amendments are fully supported by the specification, and do not introduce new matter. Entry of this Amendment is respectfully requested.

The total filing fee on the Transmittal Letter To The United States Designated/Elected Office (DO/EO/US) Concerning A Filing Under 35 U.S.C. §371 is calculated on the basis of this Amendment.

Respectfully submitted:

By: ____________________

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